

NEW GRASSHOPPERS (ORTHOPTERA, ACRIDIDAE)
FROM KENYA.

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The following species of *Acrididae* are described from the material communicated by Dr. V. G. L. van Someren, of the Coryndon Memorial Museum, Nairobi. The types of all new species have been kindly presented to the British Museum (Natural History), while paratypes, when available, are deposited in the Coryndon Museum.

***Aulacobothrus emalicus* sp.n.**

♂ (*type*). Antennae slender, somewhat longer than head and pronotum together.

Head relatively thick. Face strongly oblique. Frontal ridge distinctly convex in profile, very broad, scarcely narrowed at the fastigium; its surface very weakly concave below the ocellum and weakly convex above it, with small punctures which are sparse in the upper part and more dense in the lower. Fastigium of vertex broadly parabolic, wider than long, with well-defined margins which are roundly convergent behind; median carinula reaching the apex, but not very regular, and extending backwards on to the occiput; submedian lateral carinulae not very regular, but developed throughout the length of the head; the spaces between the carinulae rugulose; sides of the occiput weakly rugulose. Foveolae of vertex shallow, small, elongate, with rounded ends.

Pronotum not constricted in the middle, weakly narrowed forwards. Disc smooth, but with velvety surface, except at the posterior angles of metazona where it is somewhat rugulose. Median carina well-developed, intersected by the typical sulcus in its middle. Lateral carinae low and thick, somewhat irregular owing to punctures, weakly incurved in the prozona, distinctly divergent in the metazona; they are intersected by the first sulcus at the middle of the prozona. Posterior angle of the disc obtuse, not rounded apically, with straight sides. Lateral lobe rugulose and coarsely punctured; lower margin distinctly sinuate; posterior lower angle a little over 90°, rounded. Mesopleura and metapleura strongly rugose.

Elytra not quite reaching the apex of the hind knee; discoidal area narrower than the interulnar, with the cells forming

two very irregular rows, but without a false vein; interulnar area expanded, with regular cross-veins.

Hind femur relatively long and slender. Lower inner spur of hind tibia long, hairy, straight, with curved apex.

General colouration rusty-brown; sides of head and pronotum of darker shade; lower sides of fastigium blackish, with the lateral ocellus ivory-white and standing out sharply. Lateral pronotal lobe with an ivory-white callous linear spot below the middle, and the lower margin of the same colour. Elytra brownish hyaline, with faintly brown spots along the middle; wings infumate apically. Hind femur with narrow brown streaks on the two upper areas; knee blackish on both sides, but the apices of knee-lobes are pale. Hind tibia light-red.

♀. Robust, with thick head and distinctly convex frontal ridge. Discoidal area of elytra with an irregular false vein; an incomplete false vein is present also in the interulnar area which is moderately expanded. Colouration characterised by the presence of a sharply defined black lateral stripe occupying the upper half of pronotal lobe and extending on to the side of the head and elytra (this is merely a colour form occurring in both sexes).

Length of body ♂ 16, ♀ 24; pronotum ♂ 3.5, ♀ 4.2; elytra ♂ 14, ♀ 17; hind femur ♂ 12, ♀ 14 mm.

Emali Range, Sultan Hamud, 4,900-5,900 ft., 3-40, 13 ♂♂, 14 ♀♀.

A very distinct species, somewhat similar in general appearance to the Indian *A. luteipes* (Walker).

Rhaphotittha reducta sp.n. Fig. 1, R.

A small species with abbreviated but strongly expanded elytra and with rudimentary wings, differing in that latter character from the known species.

♂. Antennae stout, a little longer than head and pronotum together.

Frontal ridge in profile very weakly convex, deeply sulcate throughout, with sharply raised margins; the surface of the ridge and of the face scarcely rugulose. Fastigium of vertex rhomboidal, with briefly rounded apical angle which is about 90°; surface weakly concave; median carinula present in the posterior half. Foveolae of vertex less than twice as long as broad, distinctly concave, with well-defined margins. Occiput with a weak median carinula.

Pronotum without a constriction. Disc obtusely punctured, the punctures in the metazona being smaller and denser than in the prozona. Typical sulcus placed well behind the middle, the ratio of prozona to metazona being 5:3. Median carina low

but thick in prozona and weak in metazona. Posterior margin of the disc very weakly rounded, almost truncate. Lateral lobe with an interrupted, callous ridge along the middle.

Elytra strongly abbreviated, not reaching the apex of abdomen, inflated, with the scapular area very broad; venation See Fig. 1, R. Wings rudimentary, not longer than one-third of elytra.

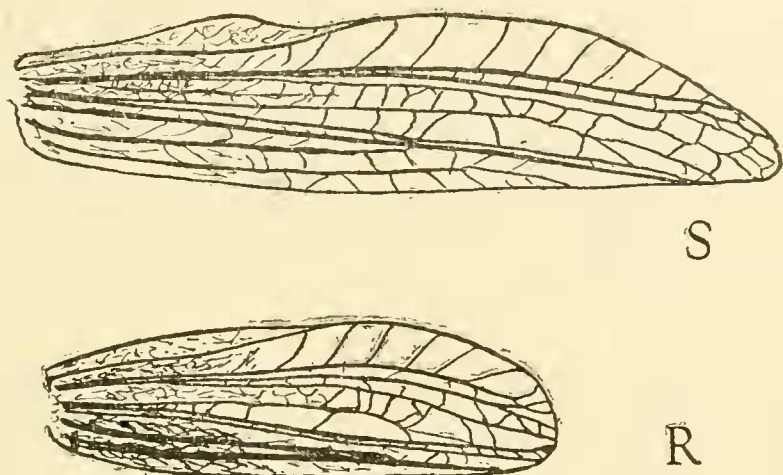


FIG. 1.

FIG. 1. *S. Rhaphotittha subtilis* Karsch, male elytron; R, *R. reducta* sp.n., ditto.

General colouration mainly buff; sides of head and pronotum with a broad chocolate-brown stripe, enclosing a light median line, which on the pronotal lobe coincides with the callous line; lower edge of pronotal lobe broadly pale. Elytra hyaline. Hind femur and abdomen rufous. Hind tibia dirty yellowish.

Length of body 10; pronotum 2.2; elytra 5.2; hind femur 6 mm.

Stony Athi, 5-40, 2 ♂♂ (East Africa and Uganda Natural History Society Biological Survey).

Pyrgomorphella albin (Chopard, 1921).

1921. *Parasphena albin* Chopard, Voyage Afr. orien, angl. Guy Babault, Orthoptères, p. 54, Fig. 31.

There can be no doubt that the species described by Chopard from the Sotik District of Kenya is not a *Parasphena*, but a *Pyrgomorphella*. A series of specimens from Naivasha, 7-37 (H. J. A. Turner) agrees in all details with the description of *P. albin* and the species appears to be very close to *Pyrgomorphella varieqata* Kay 1937, (Ann. S. Afr. Mus., 32: 161), known

from the Masai Reserve, but differs from it in smaller size, narrower fastigium of vertex and shorter elytra. These differences may be of sub-specific value only, but the material at hand is not sufficient for a definite conclusion.

***Ixalidium bicoloripes* sp.n. Fig 2.**

Apart from the morphological characters as described below, this new species differs from the known ones by the hind tibia being brownish-black in the basal half and red in the apical. In this respect, as well as in the male genitalia, *I. bicoloripes* approaches *I. haematoscelis* Gerstaecker, in which the tibia is almost wholly red but becomes brownish in the basal third.

♂. Antennae a little longer than head and pronotum together, slightly incrassate in the apical half.

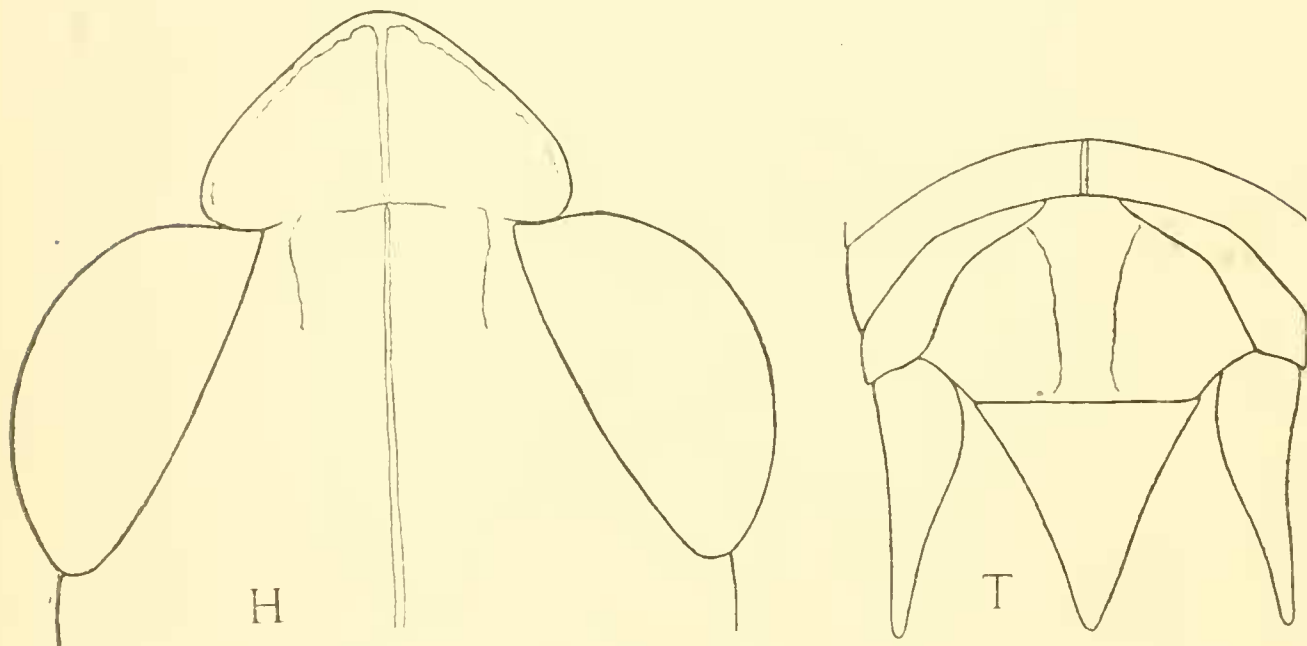


FIG. 2.

FIG. 2. *Ixalidium bicoloripes* sp.n., ♂, head and apex of abdomen.

Face in profile very weakly convex, scarcely projecting forward between antennae. Frontal ridge fairly wide and concave between fastigium and a point above the ocellus where it is constricted and becomes linear, expanding again round the ocellus and downwards from it where it is again concave. Face rugose. Fastigium of vertex (Fig. 2, H) mushroom-shaped, with broadly parabolic outline, nearly twice as broad as its length. Surface of the whole head very coarsely punctured and rugose; median carina distinct throughout, but interrupted by an irregular transverse depression at the base of fastigium.

Pronotum compressed laterally, but not constricted; its surface very coarsely punctured and rugose. Median carina well-raised, distinctly convex in profile, deeply cut by the typical sulcus which is placed at three-quarters distance from the anterior margin. Abdomen sculptured as pronotum, both punctures and rugosities becoming less pronounced posteriorly; median carina acute throughout, distinctly convex in profile on each segment.

Prosternal tubercle wedge-shaped, its apex is straight and broader than its base.

Last tergite (Fig. 2, T) with a broad and deep excision. Supra-anal plate very long and acute, clearly divided in two parts by a transverse sulcus; the basal part wider than long, with a pair of very irregular rugose ridges parallel to the middle line; the apical part acutely triangular, distinctly longer than its basal width. Cercus weakly excurved, about as long as the supra-anal plate. Subgenital plate elongate-conical, compressed laterally.

General colouration rusty-brown, with indefinite blackish markings. Posterior section of metapleura shiny-black. Hind femur on the inside black with a brown spot near the base of the upper margin; outer lower area dull brownish-black; inner lower area shiny-black, becoming dull-red towards the base. Hind tibia dark-red in the apical half, gradually becoming black in the basal half; spines dirty yellowish with black tips.

♀. Fastigium of vertex more than twice as broad as its length. Supra-anal plate similar to that in the male, with the apical portion long and acute.

Length of body ♂ 19, ♀ 30; pronotum ♂ 4.2, ♀ 5.5; hind femur ♂ 11, ♀ 14.5 mm.

Emali Range, Sultan Hamud, 4,900-5,900 ft., 3-40, 4 ♂♂, 4 ♀♀, 2 ♂ nymphs.

The new species differs from the closely allied *I. haematoscelis* Grst., by the colouration of hind legs, by wider fastigium of vertex, by the abdominal tergites gibbose in profile and by the shape of the male supra-anal plate. The latter in *I. haematoscelis* has the basal portion less broad, with straight sides, while the apical portion is less acutely pointed. Two other known species of *Ixalidium*, namely *I. usambaricum* Ramme 1929, and *I. obscuripes* Miller 1929, differ from *I. bicoloripes* by the colouration of hind legs, and particularly by the male genitalia, the supra-anal plate in both those species being much shorter and less pointed, while the subgenital plate is inflated, with attenuate apex. *I. transiens* Ramme 1929, has the male genitalia of an aberrant structure. The tendency to a specialisation in that respect is most pronounced in *Tangana asymmetrica*

Ramme 1929, which has been made the type of a distinct genus by that author. The female of *T. asymmetrica*, however, cannot be distinguished from *Ixalidium*, in spite of Ramme's assertion that there is a difference in the structure of the head; this is true only for some species of *Ixalidium*, e.g., *I. usambaricum* which has the fastigium more prominent than others, but the head of *T. asymmetrica* is certainly not different from that in *I. haematoscelis* which is the genotype of *Ixalidium*. The following generic synonymy should therefore be recorded:—

Ixalidium Gerstaecker 1869 = (*Tangana* Ramme 1929).

The number of the known species of *Ixalidium* is now six (not counting the doubtful *I. gabonense* Brisout 1851), but many more new species can be confidently expected, as most species appear to be highly localised. I have before me at least two undescribed species from Kenya, but abstain from describing them as they are represented by females only, and the best specific characters in the genus are found in the male external genitalia.

***Mecostibus sellatus* sp.n. Fig. 3.**

Amongst the known species, only *M. sublaevis* Karsch 1896, may be considered as somewhat similar to the new one, as its female has slight projections on the pronotum and abdominal tergites of the same type as in *M. sellatus*, where they are very large, forming a "saddle" on the back of the insect.

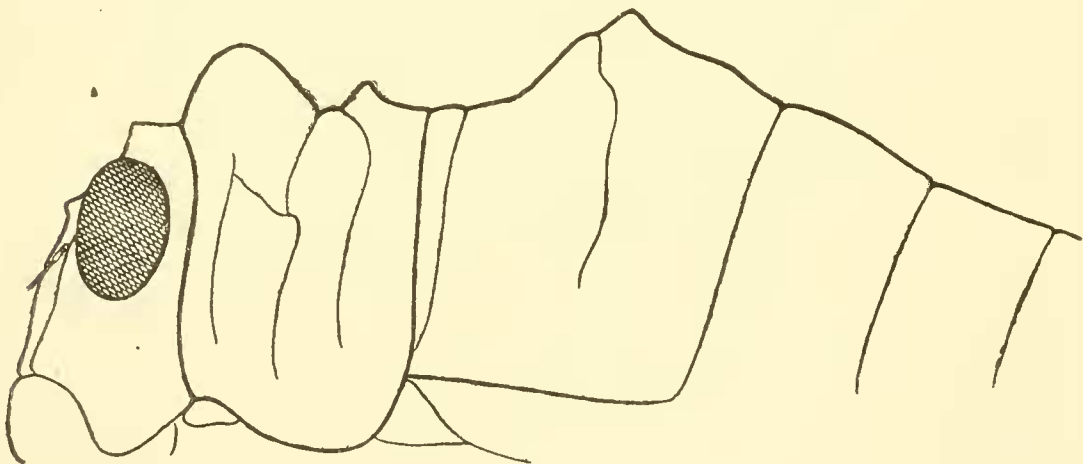


FIG. 3.

FIG. 3. *Mecostibus sellatus* sp.n., ♀, profile.

♀. Antennae fine, filiform a little longer than head and pronotum together.

Face moderately sloping forward, very broad. Frontal ridge weak, concave, with irregular margins. Lateral facial carinae

very thick, irregular; face between them concave. Fastigium of vertex strongly sloping, concave; its anterior portion half the width of the posterior; lower lateral angles of the posterior portion raised each into a strong rounded tubercle bearing rudimentary ocellus. Interocular distance about twice the anterior width of fastigium.

Pronotum weakly compressed laterally, surface shiny, but very uneven, with obtuse ridges and shallow pits. Front margin in the middle with a broadly trapezoidal projection. Submarginal furrow deep and broad; second and third furrows approaching each other near the middle, but still clearly separated. Median carina in front of the first furrow raised into a large hump which is as high as its basal length; between the second and the third furrow the carina is replaced by a shallow sulcus; in the metazona it is raised again in an obtusely conical tubercle. Lateral lobe much deeper than long; anterior margin oblique, sinuate; anterior lower angle obtuse, rounded; lower margin strongly sinuate; posterior angle broadly rounded. Mesonotum very short. Metanotum and first tergite divided only in the dorsal portion, raised in a high hump, broadly triangular in profile. Abdomen with a low, finely sulcate median carinula, and with very weak and interrupted irregularly wavy, sublateral carinae. Prosternal tubercle very large, low, transverse, weakly convex. Mesosternal interspace distinctly narrower than one of the lobes. Metasternal lobes contiguous along a line.

Front femur laterally compressed; outer surface strongly uneven; margins weakly wavy; outer knee-lobe large, longer than broad. Front tibia thick, with a shallow sulcus along the upper side. Middle coxa with a bean-shaped oblique lobiform appendage; middle femur strongly compressed and uneven; middle tibia compressed. Hind femur broad, weakly narrowed apically; upper margin acutely denticulate in the distal half; outer knee-lobe somewhat bent down, with the lower posterior angle about 90°; hind tibia sinuate, its basal portion expanded in vertical direction; hind tarsus as long as three-fourths of the tibia.

General colouration rusty-brown, with blackish-grey dots; the dorsal humps blackish. Hind femur and tibia on the inside brownish-black, with faint reddish tinge.

All legs and lower edges of body fringed with long soft pale-yellow hairs.

Length of body 36; pronotum 6.8; hind femur 16 mm.

Emali Range, Sultan Hamud, 4,900-5,900 ft., 3-40, 1 ♀.

BRACHYPTEROUS SPECIES OF *Catantops* FROM EAST AFRICAN
MOUNTAINS.

Two brachypterous species of *Catantops* have so far been described from East African mountains, *C. lobipennis* Sjöstedt 1933, from Mt. Elgon and *C. impotens* Johnston 1937, from Mt. Kenya. It appears, however, that endemic species occur on other isolated mountains as well, since I have before me two new ones, one from the Mt. Kinangop in the Aberdare Range and another from the Ngong Hills. All four are quite closely allied, but clearly distinct in a number of characters. General appearance and most of the usual morphological characters are very similar in all four species and it appears best to offer for their differentiation the following key:—

- 1 (2). Elytra reaching nearly to the apex of the second tergite and almost contiguous on the dorsum, broadly oval (Fig. 4, L, below). Male cercus (Fig. 4, L, above) simple, very slightly curved. Hind femur with uninterrupted brownish-black stripe on the outside; lower outer sulcus brownish-red. Hind tibia red.—Mt. Elgon.

lobipennis Sjöstedt.

- 2 (1). Elytra extending only just beyond the hind margin of the first tergite, widely separated on the dorsum. Male cercus distinctly curved.
- 3 (4). Hind tibia reddish-brown, paler at the base. Hind femur with the lower outer sulcus brownish-black; outer side with the brownish-black stripe usually interrupted obliquely. Elytra broadly oval (Fig. 4, I, below). Male cercus strongly curved, its apex weakly expanded and obliquely truncate (Fig. 4, I, above).—Mt. Kenya.

impotens Johnston.

- 4 (3). Hind tibia bright-red. Hind femur with the outer lower sulcus reddish-brown. Elytra narrowly oval (Figs. 4, K and 4, N, below).
- 5 (6). Larger and of darker general colour. Elytra broader, the greatest width being at the middle (Fig. 4, N, below). Male cercus longer and more curved; its apex somewhat expanded and truncate, with the lower angle briefly attenuate (Fig. 4, N, above). Length of body ♂ 17, ♀ 23; pronotum ♂ 4.5, ♀ 6; elytra ♂ 3, ♀ 4.5; hind femur, length ♂ 10, ♀ 13; hind femur, maximum width ♂ 3, ♀ 3.8 mm.—Ngong Hills, 8,000 ft. 8 ♂♂ (including the type), 13 ♀♀.

ngongi sp.n.

- 6 (5). Smaller and of paler general colour. Elytra narrower, the greatest width being beyond the middle (Fig. 4, K, below). Male cercus shorter and less curved; its apex roundly truncate, with the lower angle not attenuate (Fig. 4, K, above). Length of body ♂ 14, ♀ 20; pronotum ♂ 4, ♀ 5.2; elytra ♂ 3, ♀ 3.5; hind femur, length ♂ 9, ♀ 11; hind femur, maximum width ♂ 3, ♀ 3.5 mm.—Aberdare Range, Mt. Kinangop, on *Lobelia aberdarica*, 31/10/1935, (J. Ford, British Museum East African Expedition), 1 ♂ (type), 1 ♀; Mt. Kinangop, 12,000 ft., 1 ♀ (F. M. Edwards, same Expedition); West Aberdare, above 9,000 ft., March-April, 1934, 1 ♂, 1 ♀, *in copula* (H. J. A. Turner).

kinangopi sp.n.

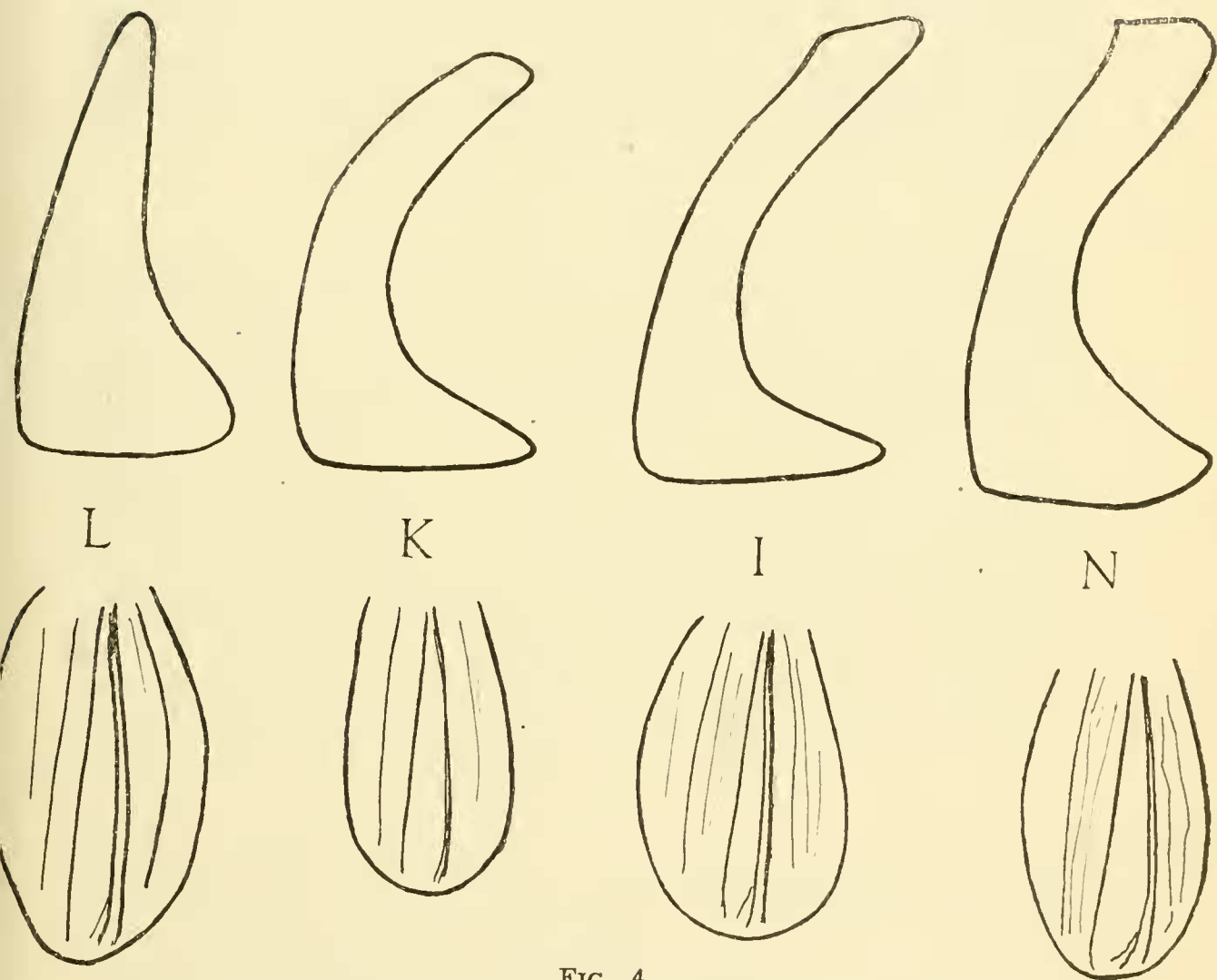


FIG. 4.

FIG. 4. Male right cerci (above) and male right elytra (below) of:
L, *Catantops lobipennis* Sjöstedt; K, *C. kinangopi* sp.n.
I, *C. impotens* Johnston; N, *C. ngongi* sp.n.

There is little doubt that further collecting on other East African mountains will bring to light more new species of brachypterous *Catantops*, which seem to represent an excellent example of species formation through isolation. The four species so far known all belong to the group regarded by Sjöstedt (1931, Ark. Zool., Bd. **22A**, No. 15, p. 42) as a subgenus *Vitticatantops*, except that all species included in the latter have normally developed elytra and wings. Judging from the distributional data, the brachypterous species dealt with above, represent the results of isolation of the normal stock on mountain tops owing to fluctuations in climate. Their case is clearly parallel to that of the brachypterous species of *Paracomacris*, *Euprepocnemis* and *Gastrimargus*, and of *Parasphena* and lends further support to the theory of their recent development from lowland forms advanced by me elsewhere (Uvarov, 1934, Linn. Soc. Journ., Zool., **38**, p. 592; 1938, Miss. Scient. de l'Omo, Zool., **4**, p. 146). A thorough exploration of the mountain fauna of East Africa would undoubtedly supply most instructive evidence with regard to the evolution of species through spacial isolation.